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## NOTES ON THE CARE OF INFANTS,\*

BY

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In the time allotted to me for this lecture, I cannot enter as fully into the subject as its importance demands. I trust, however, that the remarks I am about to make will be of some assistance to you.

The care of an infant is a great responsibility, and requires the exercise of keen observation and good judgment, with a conscientious faithfulness in the fulfillment of all its duties. Consider for a moment what it really involves. The life of a helpless human being absolutely in the hands of the person having it in charge; a human being who is utterly powerless to offer its protest against mismanagement and ill usage, and whose life is often sacrificed by this mismanagement.

The old saying, "as the twig is bent so the tree inclines," should be remembered by those who have charge of infants. Neglect and ignorance sweeps off thousands whose lives, by proper attention to the laws of health, should be saved.

In the great cities of the United States, two-fifths to one-half the infants born, die under five years of age, and from one-quarter to one-third die under one year of age; that is, out of every hundred children born, about twenty-five die before the end of the first year, and forty-five or fifty before reaching the close of the fifth year. In country towns and villages this mortality is by no means as large. In foundling institutions where the death rate a few years ago was enormous, with improved sanitation and greater attention to food and infant

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hygiene, the percentage of mortality is now less than it is in private homes. This proves "that disease and ultimate death result, in a vast majority of cases, not from necessity or from accident, but really from the infringement of those laws and conditions necessary for carrying on the functions of the body in a healthy manner. As surely as we give increased attention to infant food and hygiene, so surely will the yearly death rate diminish." Pure air, cleanliness, suitable clothing, with simple, wholesome food, will do much towards preventing disease.

An infant at birth weighs, on the average, seven or eight pounds. Its pulse is between 130 and 140, its respiration between 40 and 50; this rate of pulsation and respiration decreases as the infant grows older, until at the age of two years, the normal pulse is between 110 and 120, and respiration between 23 and 30. The lungs, which immediately before birth were in a state of collapse, instantly expand, the bronchial tubes and air cells become filled with air at the first cry. This cry, which sends a thrill of joy through the mother's heart, after her hours of pain and months of discomfort, is of greatest benefit to the child.

At birth the stomach is small. The liver is very large, occupying almost one-third of the abdominal cavity. You must remember this in the arrangement of the umbilical cord immediately after birth. Always lay the cord downwards and to the left after it is dressed, so that it cannot press upon the liver. On account of the large size of this organ, the child often vomits, when placed on its left side after nursing, owing to the compression of the stomach by the weight of the liver.

After the infant is washed, the umbilical cord should be wrapped in a piece of old linen, and, as I have said, laid to the left. Over this should be placed another

piece of old linen, to keep the cord in place, and over all, a bandage of flannel wrapped once or twice about the body. The bandage should reach from the arm pit to the hip bone, and should be drawn just tight enough to keep it from slipping. This entire dressing should be changed at least once a day. The cord gradually dries and drops off on the fifth or sixth day, a little spot of red granulating surface being left, which heals without further attention in a few days. Occasionally, however, the healing process does not go on properly, and it may be necessary to apply some astringent powder like bismuth or an alum solution. I will here state that at the umbilicus we frequently have a bulging or rupture, a protrusion of the bowels, showing itself in the form of a soft round swelling or tumor, especially prominent when the child cries. This deserves your attention, but do not make the mistake of trying to overcome the swelling by simply tightening the bandage. Remember that a bandage that is too tight will frequently interfere with the proper functions of the liver. A very thick pad of the size of half a silver dollar, placed over the umbilicus and under the bandage, will frequently be all that is necessary, although the bulging is extreme this will not suffice. You must then exert more pressure on the pad than it is safe with the bandage, and this must be done with strips of adhesive plaster. The best plaster for this purpose is the rubber adhesive plaster.

Immediately after birth the infant is more or less covered with a secretion which is removed by the first washing. Before proceeding with the bath, it is a good practice to anoint the body with warm olive oil, this softens the secretion, and enables the nurse to remove it without hard rubbing on the delicate skin. The temperature of the water should be  $92^{\circ}$ . This should be the uniform temperature of the water during the first two months.



As the infant grows older the temperature can be gradually reduced, a bath of  $88^{\circ}$  or  $90^{\circ}$  being proper for an infant of three or six months, and one at  $86^{\circ}$  for an infant between six and twelve months. During the second and third years the temperature should be about  $84^{\circ}$ . Excessively hot baths are depressing and injurious. The bath should continue from five to six minutes; the surface of the body should then be gently rubbed with a soft towel, to produce a reaction and a glow of the skin. The bath should always be given in a warm room, and in winter before an open fire, if possible, as chilling of the skin should be avoided. Many have an idea that an infant can be hardened by bathing in cold water; this is a very great mistake and cannot be too strongly condemned. I would here warn you never, in any way to attempt to harden a child, either by clothing it lightly, sending it out in improper weather, or by cold baths. *Never adopt the principle of "hardening a child."* In addition to the morning bath, it is well for you to sponge the infant partially at bed time, especially during the summer months; the sponging removes the acid secretions from the skin and is conducive to sleep. At the time of dentition, if a child is restless and sleepless, the sedative effect of a full warm bath at bed time relieves the brain excitement, the cause of the sleeplessness, and has a soothing effect upon the whole nervous system. In giving the bath wash the head first and dry it, then the face, and proceed to the rest of the body. Infants often take cold by the head not being dried before proceeding to bathe the rest of the body. If you cannot get the room warm enough, omit the bath, and above all avoid the least draught while bathing.

Nurses often seemingly take delight in scrubbing the infant's face and ears with soap and water, this is cruel as well as unnecessary. Never give a full meal just

before bathing. If the hours for feeding and bathing are regularly observed, this need never be necessary. Occasionally a child will be hungry at this time, if it cannot be quieted, give a small portion of nourishment before the bath, reserving the rest until afterwards. Bathing after a full meal is very apt to create indigestion.

Although cleanliness is an important matter to attend to, yet like all good things, it is sometimes abused. You must remember that a bath too prolonged is very depressing in its effects, also that delicate and feeble infants and children cannot always bear a full bath. If a child's hands and lips look blue, or the hands are cold, the bath has been either too prolonged or too cold, and you are doing harm. If the skin has not a healthy glow, you are producing a depressing effect and must alter your method of bathing. It is advisable to give delicate and feeble children their bath at night rather than in the morning. If a child is ill do not put it in a full bath, but sponge it off in your lap. There is one matter connected with bathing which I wish to call to your attention, and that is excessive use of soap. I have seen, time and again, mothers and nurses take one of these little creatures and lather its body with soap and water as if it had not had a bath in a year. Remember that the skin of an infant is delicate and cannot bear with impunity such scrubbing. Soap is alkaline in its nature, and removes the natural oil from the skin and renders it liable to skin trouble. The skin of a healthy child should be soft and glossy. With the first bath soap is necessary, but with subsequent full baths it is entirely unnecessary, excepting at intervals; do not use it daily. Clear, pure water and gentle friction applied by the sponge or hand is all that is necessary. If the water is hard, a little borax may be added. During the summer months when



the secretions of the skin are liable to be acid, and to produce that condition known as prickly heat, the addition of a small quantity of borax to the water will give great comfort, by neutralizing this acidity.

You will find salt water baths of great benefit to delicate and feeble infants and children, whose skin is dry, or when there is a want of perfect circulation, and a general want of tone. You can give either a sponge or a full salt water bath three or four times a week, not cold, but warm or tepid. For feeble children the bath should be of short duration, not more than three or four minutes, and they should be rubbed well on being taken out. I have frequently seen children improve in a most astonishing manner after a series of tepid salt water baths. You can use either the natural sea water, made warm by the addition of boiling water, or, what is equally good, make the salt water by adding Ditman's sea salt or even common salt to water. I would make one exception in the use of soap, that is after a child has had its movements. Do not rub the soap on the sponge, but prepare a little warm castile soap suds.

This leads me to the importance of changing the napkins immediately after they become soiled by passing water or by movements, the necessity of which is so often overlooked by nurses, many of whom are satisfied with simply drying the parts after an evacuation, without washing them. I will repeat: after a movement or passing water, the napkin should be removed, the parts sponged off with tepid soap water, dried gently but thoroughly, and then powdered. The best powder I know of for this purpose is Fuller's earth. The Talcum powder is also very good. Do not use powdered starch or flour or farina; these being of vegetable origin, combine with the perspiration, and are apt, in the folds of the skin, to turn acid and produce irritation. Lubin's and other



baby powders are not to be recommended. After the sponging, drying and powdering, a clean warm napkin should be put on, always assuring yourself that the napkin is not tight enough to interfere with the free movement of the legs. The napkin should always be pinned to the undershirt, in order to thoroughly cover and protect the bowels. Nurses, as a rule, neglect this important matter. The exposure of this part of the body is a prolific cause of bowel trouble and colic. For infants over two or three months of age, a knitted band is preferable to flannel, and this should have a tab attached, to which the napkin should be pinned.

In clothing infants, more attention is often given to fine appearance, than to comfort and health. The clothing should be soft, light and loose. If the waist or bands are too tight, respiration and digestion are interfered with, and the child becomes restless and fretful. Next to improper feeding, the great enemy to infantile life is cold, and with cold, I include chill to the surface. Do not imagine that a child must sneeze and cough to show that it has taken cold, this is a great mistake. Cold will often manifest itself only by an attack of vomiting (indigestion) or diarrhœa.

The bodily heat should be maintained at a uniform degree, and for this purpose, flannel or wool next to the skin is indispensable at all seasons of the year. Wool is a non conductor of heat, and therefore protects the child from sudden changes of temperature. It also absorbs the insensible perspiration from the skin, thus preventing its too rapid evaporation and consequent chill.

It is needless to speak of low neck and short sleeves, fashion has done away with this injurious practice, but some mothers have not yet discarded the equally harmful custom of short socks. The feet should be kept warm. The protection of the feet is of especial import-

ance as the child commences to walk ; mothers thoughtlessly often allow their little ones to walk on the cold ground, in shoes manifestly unfit for the purpose. The exposure of the feet and limbs disturbs the general circulation, and has a marked effect upon the digestion.

The clothing and bands should always be changed at night, and when the babe is divested of the long swathing garments, let it enjoy for a few moments the free movements of its limbs and body. Warm your hand and gently rub the body, let the child lie on its back with the feet to the fire ; it affords great comfort and is always soothing.

After the morning bath, it should be fed and then put to sleep. Do not dress the child fully, as many do, but simply put on its soft undergarments, its socks and flannel wrapper. The sleep will be more prolonged and refreshing than when fully dressed.

During the early months it is of great importance to pay strict attention to the mouth. During the day it should be washed out frequently with cool water, to which a little borax is added. A certain amount of milk will remain in the mouth after nursing, and if this is not washed out, it will take on an acid fermentation, and create that distressing condition you have doubtless all seen, which is a source of great discomfort and pain to the child, and prevents it from nursing.

“ The sleep of the healthy infant is tranquil, deep and prolonged, its countenance at the time being calm and happy, its breathing slow and occasionally interrupted by deep inspirations or sighs, and its limbs relaxed.” For the first few weeks after birth, the healthy infant passes most of its time in sleep, and does not cry without a reason : if the crying continues, the cause should be sought for, either the clothing is too tight and uncomfortable, or the food improper, creating colic, or there



is pain from teething. The natural condition of a healthy infant, when awake, is to lie quiet and happy in its crib.

Nothing is more distressing to an anxious mother or to an impatient nurse, an infant who is wakeful at night. The temptation to give it some soothing dose containing opium, is very great. It seems almost needless to warn you against this pernicious habit, yet more than once have I known a nurse to give paregoric to an infant a few days old, giving it without the consent of the mother or doctor, in order that she might not be disturbed during the night by the infant crying. Seek the cause of the crying or wakefulness, rather than give an opiate or that abomination, Mrs. Winslow's Soothing Syrup, which owes its virtue to the morphine it contains. The frequent administration of an opiate has a marked effect upon the nervous system, rendering it still more susceptible to irritation, and consequently more liable to convulsions and the long line of troubles following feeble nerve force. Regularity in the hours for sleeping is as important as regularity of feeding.

The period of infancy includes the time between birth and the completion of the first dentition, about two and one-half years. During this time, the most careful attention should be paid to the quantity and quality of food given, for it is chiefly through improper feeding that infant mortality reaches such a high percentage. The carelessness and ignorance often displayed by mothers and nurses in feeding infants during this period is appalling.

It is, perhaps, important to say a few words about the nourishment of infants during the first two or three days after birth, as at that time they are so often improperly cared for. After the infant is washed, dressed, and the mouth washed out with cool water, it should be placed

one side, warmly covered, and will require no further attention for several hours. Do not commence to dose the little one with molasses and water or castor oil, as is so often done by many old nurses, for the purpose, as they say, of "clearing the bowels out." I have frequently known a baby dosed within an hour after its birth, with molasses or olive or castor oil.

During the first twenty-four hours of life, little or no nourishment is required, and *never* any medicine. Nature provides the mother with all the medicine required. The first secretion of the breast, after birth, is cathartic. The babe should be put to the breast within a few hours after birth, for the two-fold reason, that it may obtain this first secretion from the breast, and also that the act of nursing may exert a reflex effect upon the womb, aiding it to contract. This contraction is the cause of the pain, so often spoken of by mothers, while nursing during the first few days. The child should be put to the breast several times a day until the milk appears in quantity, which it usually does on the third or fourth day. During the first twenty-four hours the infant sleeps most of the time, and generally requires nothing more than it obtains from the mother. You may give it a little cool water, but do not dose it with the customary mixture of sugar and water, if you wish to avoid the colic. On the second and third day, however, it is generally necessary to give some nourishment, simply milk and water, of the proportion one-third milk and two-thirds water with a little sugar in it. It is not uncommon to hear the nurse say on the second or third day, "Doctor, the baby has done nothing but cry all day." In nine cases out of ten it will be found that the little one is hungry, it has been fed on sugar and water, or too highly diluted milk.

The natural food for an infant is, of course, the breast



milk. Every mother, therefore, should nurse her own child if possible; only when her own health is imperilled should this be neglected. The average length of ability to nurse is from eight to ten months; many, however, are only able to nurse from three to four months. Even this short period of time is of extreme importance to the infant, for every day the child lives, lessens its liability to intestinal trouble, and strengthens its resistance to disease. Statistics show that the mortality is less among infants that are nursed, than among those artificially fed.

Regular hours for nursing, is a very important matter for the nurse to insist upon. The laws of health require regularity in all things, and at no period of existence is this more important than during infancy. You can instil regular habits in a baby, as well as in an adult. You can accustom it to expect its nourishment at definite periods. During the first two or three months, the baby should be put to the breast every two hours in the day, and two or three times at night. Absolute exactness to the minute is not always expected. If the child is sleeping quietly it should not be aroused, unless the sleep is unnaturally protracted. It will usually awaken when the system requires more nourishment. Do not put the baby to the breast every time it cries. The frequent nourishment may pacify and sooth the little one, but over feeding will derange the digestion. The cry, which is the only means for expressing hunger, thirst, pain and discomfort, is very often not a call for food, but a request for water. A half a teaspoonful or a full teaspoonful of cool water given several times during the day, not only gives great comfort, but is of decided benefit to the digestion. A baby of five or six months and upwards, requires feeding not more than five or six times in twenty-four hours. Insufficiently nourished infants

sleep very little until they become prostrated, when they are drowsy in consequence of passive congestion of the brain. In this condition of drowsiness, it should be awakened frequently for nourishment.

The emotional state and physical condition of the mother has, at times, a very decided influence upon the milk, as is shown in its effect upon the child. A mother should never nurse her child immediately after an outburst of emotion, either of anger, fear or grief. The milk should be drawn off after any excitement, and the child not nursed until the mother's state of agitation has subsided. Any violent emotion produces a chemical change in the mother's milk, which has a very deleterious effect upon the child. It is not uncommon for an infant while in a state of perfect health, to be seized with a violent intestinal trouble after nursing its mother who has been violently agitated. Cases are recorded in which a child has died suddenly after nursing its mother, who has been in a state of violent emotion. Physical fatigue also produces a chemical change in the breast milk, and for this reason a mother should never nurse her child while she is exhausted from over exertion. Emotional excitement and physical fatigue, are often causes of apparently unaccountable diarrhœa and indigestion in infants. When under either influence, remember to draw off the milk from the breast before nursing, giving the infant milk and water, if necessary, until the breasts refill.

Not unfrequently the character of the mother's food will affect the nursing infant. Experience must be her guide in this matter. If the babe is suffering with diarrhœa, the mother must observe whether this condition is not occasioned by her own diet.

The breast milk is sufficient nourishment until the age of six or eight or possibly twelve months, provided it is



abundant and of good quality. If the mother does not show exhaustion and the infant is thriving, it need receive no other food during this period. Frequently the mother is unable to afford sufficient nourishment after the second or third month. It is then necessary to supply the deficiency with artificial food.

I have not time in this paper to enter upon the discussion of wet nurses.

The importance of thoroughly understanding the artificial feeding of infants cannot be too highly appreciated, for through ignorance on this subject, thousands of these little ones perish annually.

The substitute for breast milk, is the milk from the cow. It is often asked whether it is necessary to give an infant the milk from one cow. I do not think it essential. If you are certain that the cow is in a good condition of health, has good wholesome food, is housed at night in a clean stable, and in winter is allowed plenty of fresh air, it may be well to give one cow's milk. Milk from a cow that is stall fed is not suitable for an infant. Every cow is subject to changes in health; the quality of its milk may be altered by indisposition or variation in its food. These conditions are liable, at any time, to produce an unpleasant effect upon the child. There is more uniformity in the milk from a full dairy than in that from one cow. It is my experience that the milk from a dairy is safer as a general rule. Those who prefer it from one cow, should assure themselves that the cow is not pregnant, for in this condition the quality of milk is apt to be poor, not affording sufficient nourishment, and will frequently produce troublesome diarrhœa. I have seen repeated instances of this. In one case, where the milk received from one cow twice a day was most carefully looked after, the infant was affected with a troublesome diarrhœa lasting several

weeks, which did not yield to treatment. The cow was kept on a farm where the food and the sanitary condition of the cow shed were all that could be desired. As soon as I became aware that the cow was pregnant, I immediately stopped giving its milk to the infant, and ordered milk from the full dairy, with the result of immediate cessation of the diarrhœa and no further trouble.

Another question is often asked—is it advisable to give condensed milk? My answer is: do without it if you can. If you are living in the city or travelling, where the quality of milk is questionable and that obtained does not agree with the infant, then you may give condensed milk, but in the country avoid it. The best brands of condensed milk are the Swiss and Borden's, refuse all others. In the use of condensed milk, nurses are apt to dilute it too much, so that the infant does not obtain the full supply of nourishment. Condensed milk is about eight times as strong as good cow's milk, therefore, to every (level) teaspoonful of the condensed milk, add eight teaspoonfuls of water, and treat it as you would ordinary milk. All milk should, without exception, be given warm. Mothers and nurses not unfrequently give babies cold milk at night, in order to save themselves a little trouble, doubtless persuaded that it is equally good. This is a reprehensible practice, as it is liable to cause colic and general disturbance of the digestion. Cold milk arrests the act of digestion.

The analyses of milk from different cows, as well as that from women, give varied results. The proportion of caseine, butter and sugar, will vary according to the richness of the milk. This want of uniformity in the ingredients, especially of the caseine, accounts for the disturbed digestion of young infants, when exchanging the milk from one cow for that of another.

Vernois and Becquerel give the following analysis of milk :

	WOMAN'S MILK.	COW'S MILK.
Water, . . . . .	889.08	864.06
Caseine and Extractions, .	39.24	55.15
Sugar, . . . . .	43.64	38.03
Butter, . . . . .	26.66	36.12
Salts, . . . . .	1.38	6.64

If the above table (representing parts in a thousand), is compared with the following (representing parts in a hundred), it will be apparent to you how the milk from different women will vary, as will also that of cows.

\*The following table shows the mean composition of human milk (from 184 analyses), and of cow's milk (from 128 analyses) as given by N. Gerber :

	WOMAN'S MILK.	COW'S MILK.
Water, . . . . .	87.57	86.23
Caseine and Albumen, .	1.95	3.70
Sugar, . . . . .	6.64	4.93
Butter, . . . . .	3.59	4.51
Salts, . . . . .	0.22	0.61

Woman's milk should have a specific gravity of 1033.69, and cow's milk 1032.38. The milk given to young infants should resemble, as nearly as possible, that from the mother.

From the above analysis we see that there is a greater proportion of caseine in the cow's milk. This caseine is the most troublesome element in artificial feeding. It coagulates rapidly, and in large masses, forming heavy curds upon which the digestive fluids of the stomach act very slowly. It is necessary, therefore, during the first few months of life, to remove a portion of the caseine, or what is equivalent, to dilute the milk with water. The percentage of sugar is another difference between the two milks, there being more sugar in the human milk.

In giving cow's milk to infants one or two months old, you must dilute it one-third, that is, to every tablespoonful of milk, add two tablespoonfuls of water, also a little

\* Jacobi, article on Infant Hygiene, Ziemsen's Cyclopedia, Vol. 18.



sugar. To a generous half pint of the milk and water, add a scant teaspoonful of crushed loaf sugar. At the commencement of the third month, you need dilute the milk, as a rule, only one-half.

When preparing the food, let the water be boiling and add it to the milk. Do not boil the milk. In giving these directions, I assume that you are using good rich milk, and not that already adulterated by the milkman. If the nourishment is of sufficient strength, the proper development of the infant and its happy, cheerful condition will testify to it. If the child is peevish, and the limbs not round and fat, and there is also no increase in weight, you may rest assured that the quality of milk is not good. As the infant grows older the dilution of the milk may be steadily diminished, until at seven or eight months, and sometimes earlier, pure undiluted milk may be given.

During the whole period of infancy, the caseine is a disturbing element. To prevent the coagulation of the caseine, it is generally necessary to add lime water to the milk. This retards the acid fermentation. The farinaceous food, which is given as the child grows older, also retards the coagulation of caseine by separating the curds, thus checking its formation in large masses. When with very young infants, there is a tendency to the formation of curds, it is often beneficial to dilute the milk with barley water, the mucilaginous quality of which checks the coagulation of the caseine and renders it less tough. I would here say, that the stomach of an infant is not capable of digesting farinaceous food previous to the third month. The saliva, which is necessary to assist the digestion of starch, is not secreted in any quantity before the third month. The milk should be prepared fresh at each feeding, and not in quantity for the day.

Not unfrequently, during the hot weather, the child's

stomach will become disordered. It will have repeated attacks of vomiting curdled milk, and the condition of the stools will show that the caseine is not digested. When this cannot be rectified by lime water, or other alkalies added to the milk, it is advisable to abstain from giving milk altogether, for twenty-four or forty-eight hours or possibly longer until the intestinal canal is thoroughly freed from curd. During this time arrowroot water or rice water may be given, in which a little cream may be added, in the proportion of five or six of the former to one of the latter, adding a little loaf sugar. In the case of an infant over two months old, when it is necessary to continue this form of food several days, you should also give a little beef juice or clear mutton broth.

Until a child reaches the age of eight or nine months, milk should be the sole article of diet, unless there is physical weakness requiring a heartier kind of food. At this age (eight or nine months) farinaceous food may be added to the milk. I should recommend oatmeal and imperial granum. It is important that the oatmeal should be of the best quality, the Irish meal is preferable. It should be boiled thoroughly, and never less than two or three hours, always being cooked in an oatmeal kettle, that is, one kettle within another, the outer one being partially filled with water, so that the inner one is not brought in direct contact with the fire. Before using, the meal should be strained through coarse muslin, being brought to the consistency of thin gruel by the addition of hot, never boiled, milk. Prepare in the morning sufficient meal to last throughout the day, keeping what is not immediately needed on the ice. Do not, under any circumstances, make the oatmeal thicker than as above recommended, the infant's stomach cannot digest much starch or gluten. A little salt should be added to the gruel and slightly, very slightly,

sweetened. In the use of imperial granum you may safely follow the directions given on the box.

We occasionally find that Mellin's food may be used with advantage, when the infant's digestive organs are naturally weak, and the process of digestion is carried on with difficulty. Mellin's food may, in these cases, be used from the earliest weeks of infancy, substituting the heartier food, such as oatmeal and granum, as the child grows older. A young infant's life has often been saved by the aid of Mellin's food, when the digestion was weak.

Do not be tempted to give miscellaneous food to infants. The simpler the food, the better the digestion and the fewer attacks of colic. Colic is not an essential accompaniment of babyhood, as many seem to think.

Milk should never be allowed to remain uncovered for any length of time; it should be kept in a cool place, but entirely separate from any other articles of food. Milk rapidly absorbs any odors or impurities, and if brought in contact with meat, vegetables, fish or other food, will soon become tainted and unfit for use. Nursery refrigerators can be obtained for a small sum. I strongly recommend them for every nursery.

An infant should take its nourishment when in a semi erect position; never feed it while lying on its back. The muscle contracting the cardiac opening, through which food enters the stomach, is very feeble, so that if the infant is fed in any other position than the semi-erect, the food is liable to be brought up. Remember also the importance, as I have already shown, of not allowing a young baby to lie on its left side after being fed.

I have only given directions for feeding young infants. An infant of sixteen or eighteen months and over, requires heartier food. At this age, great errors of judgment are only too common. Too much variety must be avoided. Hominy, oatmeal, a little finely cut up meat,



eggs, soft boiled or dropped, beef, mutton or chicken broth, bread and butter, occasionally mashed potatoes and a little fruit may be given, but with discretion. Milk, however, must still be the chief article of diet. I need hardly warn you against tea, coffee, sweets and vegetables. Simplicity of food is the secret of health.

I cannot emphasize sufficiently the importance of perfect cleanliness in the care of bottles, pitchers, and all utensils for preparing and containing food. A sour bottle or pitcher will start the process of fermentation very rapidly, thus tainting the milk, and inducing indigestion. Babies are constantly in ill health from this source.

Patent nursing bottles should be discarded, on account of the great difficulty in keeping them perfectly sweet and clean. The old-fashioned long necked bottle is much simpler, and in every way preferable; it is more easily cleaned, and can be kept clean. Immediately after feeding, plunge the bottle in a basin of cold water (which you should always have standing in the nursery), until an opportunity offers for a more thorough cleansing. The bottle should then be cleansed and scalded with boiling water, refilled with fresh water, in which a little soda or borax is dissolved, and allowed to stand until again required. One should have a number of these feeding bottles, so that each may be in turn thoroughly cleansed and allowed to stand some time in the alkaline water. The best nipple is one of dark rubber, fitting over the neck of the bottle. The hole in the nipple should not be too large, for if so, the child will drink too rapidly, thus creating indigestion.

Let me caution you against the habit, so prevalent with nurses, of rocking and tossing young infants. The sensitive nervous system cannot stand much shaking.

During the period of dentition, commencing about

the fifth month, the nervous system of the infant is under an excitement. The pressure and pain produced by the tooth in its eruption through the gum, creates a systemic disturbance, and extreme irritability of the nervous system, as is manifested by fever, restlessness, loss of appetite, convulsions, and a susceptibility to influences, which at another time would produce little or no effect. Extreme caution is necessary, at this time, to guard against overfeeding. If the infant is hungry, do not urge food upon it; remember that the digestion is feeble and that the full quantity of food is liable to produce disturbance. The fever creates great thirst, to quench which, the little one takes the bottle or breast with eagerness, thereby overloading the stomach at a time when its digestive powers are very feeble, and we have ensuing, vomiting and diarrhœa. It seems not to occur to many mothers and nurses that a babe may be thirsty as well hungry. Do not hesitate to give water, especially arrowroot and rice water, freely during dentition if the baby is feverish; apollinaris or vichy water may be given with advantage, the alkaline nature of which will allay the irritability of the stomach and assist digestion. Sleepless nights, fretful days, fever and convulsive twitchings can often be magically allayed by lancing the hot swollen gums.

Do not have the mistaken idea, that dentition is a cause of disease, and that it is unnecessary to relieve a disorder until the process of teething is past. As a result of this error of judgment, a disease that is easily relieved at the outset, is allowed to progress until it becomes serious. If dentition *per se* is really the cause of intestinal trouble, why is it that mothers do not fear it during the winter months? Dentition is more troublesome in summer, because we have added to the nerve irritability of teething, the depressing effect of heat, a

great factor in lowering the vital force. Also the difficulty (or carelessness) in keeping the milk sweet. Therefore greater attention should then be paid to the quality and quantity of food, to the manner of bathing, to the protection of the body from exposure to the sun and during the forenoon, as well as against the chill of the cool afternoon air, and insufficient clothing at night. It is carelessness and neglect during the time of teething, and *not* the process of teething that kills.

Mothers and nurses do not always seem to realize the delicacy of young infants, if we are to judge by their careless dosing on the one hand, and their neglect of ailments on the other. Never disregard the slight illness of the baby, professional aid is often sought when the disease is beyond control. With the exception of prescribing for a few simple disturbances, or acting in the emergency until the physician arrives, the nurse should never take the place of the doctor. The sad result of meddling or delay, is too often witnessed. There are a few ailments, however, such as "snuffles," colic, retention of urine and slight constipation, for which nursery remedies can be employed.

Snuffles is frequently due to the neglect of thoroughly drying the head after bathing, or to sleeping in a draught; although, of course, it may be induced by exposure of any part of the body. Though a simple complaint, it is extremely distressing to the child. The nose being stopped by secretion, breathing through it is difficult or impossible; for this reason nursing or taking the bottle, is done with great labor and very imperfectly, on account of inability to retain the nipple continuously in the mouth. Nourishment is thereby interfered with, sleep is disturbed, and the child becomes fretful. This whole condition of discomfort can generally be quickly relieved, by the application of vaseline up the nostril with



a camel's hair brush. It should be thoroughly done two or three times a day, and especially before sleeping. The infant should be placed on its back, and a small brush covered with vaseline, inserted well up the nose; the child retained on its back for a few moments, to enable the vaseline to melt and flow into the deeper portion of the nasal cavity.

Colic is produced by flatulency, and is an indication that the digestion is not perfect. When this condition exists, therefore, carefully scrutinize the quality and quantity of food given, and see that the child is thoroughly protected from chill. If the baby is nursed, the mother should observe whether her own food is not the cause of the disturbance, and modify it accordingly. The only remedies I would suggest for relief, after regulating the food, are anise and carraway waters, a teaspoonful of each in as much warm water, and tincture of assafoetida. This latter remedy I have found of the greatest benefit, give two to three drops in a teaspoonful of water. Relief is also given by warmth to the abdomen of heated flannels, or still better, the exposure of the abdomen and legs to the warm fire, rubbing the abdomen at the same time with the warm hand. There is one other means, which I hesitate to mention for fear of it being abused; I allude to gin. If the pain is very intense and the means already spoken of do not give relief, ten to twenty drops of gin in a little warm water will have a very soothing effect. Avoid paregoric and opiates; the colic can generally be relieved without narcotics.

Retention of urine is quickly relieved in most cases without medicine, by the exposure of the lower part of the abdomen and feet to a warm fire, or the application of warm flannels. When this does not give prompt relief, a few drops of sweet spirits of nitre may be given.

Occasionally infants are troubled with obstinate constipation, and there is a great temptation upon the part of mothers and nurses to give medicine. This condition is more common with bottle fed infants, than with those that are nursed. With the latter, I am accustomed to advise simply the insertion into the bowels of a small conical piece of castile soap, or the introduction just within the anus, of the end of a taper of paper that has been dipped in sweet oil. This is all that is necessary in the majority of cases. With bottle fed infants the constipation can generally be overcome by regulating the diet. It frequently depends upon a deficiency of sugar, and may be relieved by supplying more of this article to the food. When oatmeal is used, it may be given a little thicker. When these means fail, a half a teaspoonful to a full teaspoonful of manna may be dissolved in the milk with excellent result, or resort to the means above mentioned for nursing infants. I advise you not to use injections or castor oil as a habit; the former distends the bowels too much, and may lead to a chronic condition of this disorder. Both the oil and injections are proper to use occasionally, to relieve the overloaded bowels, or remove undigested food from the intestinal canal. Friction over the bowels with the hand, is also a valuable assistance in breaking up this condition. As an infant reaches the age of five or six months, much can be done for the trouble by insisting upon regularity of movements. At this age the infant should be placed on the chair at the same hour every day, and if the nurse will go through the motion of straining, or rather make the grunting noise made when one strains, the little one will soon catch the idea and materially assist in the movement. The little piece of soap or the paper spoken of, may be placed in the rectum at this time. If more than this is required, medical aid should be obtained.

Attention to the hygiene of the nursery, is as important as the proper care of the infant itself, if you wish to bring up a healthy child. Whenever it is possible a child should have a day nursery as well as a night nursery ; it should not be confined to the same room day and night. The nursery should be thoroughly aired two or three times a day. During the summer months there is ordinarily plenty of fresh air, but in winter, the nursery is liable to become foul. The common practice of drying napkins in the nursery is very reprehensible. Independent of the dampness, the odor of urine given out from the napkins contaminates the air, and renders it very unwholesome and offensive. The soiled napkins, even those wet with urine, should never remain in the nursery a moment. One rule should positively be observed, always put on a fresh clean napkin, and never, under any circumstance, one that has been simply dried after it has been used, without having been washed.

The defective hygienic condition in which a child is placed, will naturally influence its chances of life. Remember that fresh pure air with plenty of sunlight is as important as wholesome food. The nursery should be the sunniest and healthiest room in the house.

Your aim, therefore, in the care of infants should be vigilance in details, regularity in habits, protection from cold, simplicity of food, cleanliness and pure air.







